

KARELIN (1801 – 1872) AND KIRILOV (1821 – 1842)
EXPLORERS OF SIBERIA AND MIDDLE ASIA

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ON September 11, 1842,* there died in a small town, Arzamas, in central Russia, after a short illness, a student of St. Petersburg University—Ivan Petrovich Kirilov. He was on his way by stage from Siberia to Moscow, and in the absence of any relatives the police buried his remains; his death was unnoticed, and it seemed that he was forgotten by everybody.

One hundred years have passed, but the name of this youth still lives in the annals of the history of science. It is true that his name is usually connected with that of his senior partner, the more widely known explorer and botanist, Grigorij Silych Karelin. Their joint contributions to science are great and their famous expedition of 1840–45 into the Altai, Dzungaria, and Semirechensk regions is justly considered one of the most fruitful and important of the nineteenth century. Without exaggeration it may be said that they discovered and explored an enormous region for science.

These two members of one of the most perfect teams of botanists were very different men by reason of their age, social position, and temperament, and they met by mere chance. Karelin came to St. Petersburg in 1837 and there met a modest, lonesome, and apparently very poor student. Talking with him, he was struck by his intelligence, seriousness, and deep knowledge of botany. He recognized in this boy a future scientist of great promise, and, being a man of generous heart and quick impulse, he immediately took him under his protection.

“Don’t be surprised, my dear,” he wrote to his wife, “I am bringing with me a young man, whom I want you to take into our family as our son. He is I. P. Kirilov, an orphan, a poor devil, a great lover of botany, and a student at St. Petersburg University. He is like a fair girl in character but is unusually clever . . .” From that time “Vanichka” was a member of the hospitable family of the Karelins and followed his “daddy,” as he affectionately called Karelin, in all his travels. A boundless enthusiasm for the study of nature united these men.

Very little is known about the short life of Kirilov. He was born in 1821 (or 1822) in Yalturovsk in Siberia, where his father was a chief of police; he studied in Tobolsk and later in Irkutsk, where he met the well known botanist N. S. Turczaninow, who instructed him in botany from 1835 to 1837. He collected with Turczaninow on the southern shores of Lake Baikal in 1835, and the next year he made another expedition into the western Baikal Mountains. In the preface to his *Flora Baikalsi-Daurica*, Turczaninow says (p. 20): “Mr. Kirilow a rempli cette mission avec un zèle

*All dates in this paper are according to the Julian calendar (old style), which was in general use in Russia before the revolution of 1917.

et un succès remarquables, ayant trouvé plusieurs espèces échappés a son prédécesseur." In 1837 Turczaninow brought Kirilov to St. Petersburg and helped him to enter the University.

Karelin esteemed his young assistant very highly. "Best regards to you," he wrote to A. V. Richter, "from I. P. Kirilov, the most industrious, most energetic, and the smartest of all students that I have ever met in this world." In the expedition of 1840-45, Kirilov was in charge of botanical collections; he made almost all the identifications, and the well known *Enumeratio plantarum* was written by him under the supervision of Karelin and Turczaninow. There is no doubt that in the untimely death of Kirilov science lost a botanist of unusual promise.

The life of Grigorij Silych Karelin is more colorful than that of his young assistant. He was born in January, 1801, in Petersburg Province, a son of the conductor of the concert band, but he lost his parents when he was eight years old. He was placed by his elder brother in the First Cadet Corps, from which he was graduated with distinction in 1817 as a second lieutenant of artillery. He was assigned to the Office of Military Settlements, but his chance of making a brilliant military career was ruined when he wrote some derisive verses, supplemented by a cartoon, about the secretary of war, Count Arakcheev, a very powerful man in the last years of the reign of Alexander I. This became known to the "dreadful count," and Karelin was sent on February 20, 1822, into virtual exile to the small town of Orenburg on the southeastern border of Russia.

This exile seemed to be a disaster, but actually it gave Karelin a chance to become a scientist and explorer. Deprived of the comfort and gay life of the capital, he turned to the study of natural history, to which he always had a strong inclination. He was fortunate in finding an excellent teacher in the person of E. F. Eversmann, a future professor of natural history at Kazan University. Due to his extraordinary abilities, Karelin became in a comparatively short time an expert in botany, zoology, and mineralogy, and soon he started field work in natural history. He corresponded with many outstanding Russian botanists, such as Ledebour, Fischer, Meyer, Bunge, and Turczaninow, and sent them specimens from the Caspian region. His collections of Caspian plants are preserved in the herbarium of the St. Petersburg Botanical Garden.

Besides his natural history studies, Karelin was engaged in a number of other activities which prove his unusual versatility. Fortunately two consecutive governors of the Orenburg region, Count Sukhtelen and Count V. Perovsky, both capable administrators, recognized the outstanding abilities of Karelin and utilized them fully in the development of that half-civilized part of Russia.

Karelin made surveys and descriptions of various Caspian regions, explored mineralogical resources, and made a study of steel and munition plants in the lower Ural region. In 1826 he was permitted to resign from the military service. After that, he made a journey with Professor Eversmann into the Kirghiz steppes (the so-called Bukeev Orda) and made a good map of that region. In 1829 he accompanied the expedition of the

Norwegian Professor Christopher Hansteen and Lieutenant Due for astronomical and geodetical observations in the lower Volga and the Ural regions and travelled in Bashkiria and Orenburg and Perm Provinces. In 1831 he explored the basin of the Tobol River. He also successfully managed intricate diplomatic relations with semi-independent khans of the Kirghiz steppes. It may be noted here that Karelin was very popular with nomadic tribes of the Caspian region. He possessed all the qualities which appeal to the imagination of oriental peoples: he was a good looking, powerfully built, energetic man, a skillful hunter and horseman, and, although he was generous and mild in dealing with other people and had a very gay and pleasant disposition, he was always ready to defend himself vigorously against any aggression. He inspired not only love but also respect and fear.

In 1831 Karelin was employed by the Asiatic section of the State Department and soon started a series of his explorations of the Caspian Sea regions, which separated him from his family for months at a time, for he had been married some years and was the father of two daughters at that time.

In 1832 he was at the head of an expedition including four ships and a detachment of one hundred and seventy Ural Cossacks. He explored the eastern shores of the Caspian Sea, made a number of good maps, and prepared descriptions of the adjoining regions.

Karelin in 1834 commanded another expedition in the same region, with a special mission to build a fortress on the eastern shore of the Caspian Sea in order to protect Russian settlements from the raids of nomadic tribes of the Kirghiz steppes and Chiwa. After careful investigations he selected Kara-su Bay for that purpose and on May 2, 1834, founded a fortress named by him Novo-Aleksandrovsk, which was completed, supplied, and garrisoned in less than three months. This enterprise was not only a complete military success, but it did not disturb the relations between Russia and Chiwa, because diplomatic parleys conducted by the emissaries of Karelin with the Khan of Chiwa prevented the bloodshed which was feared.

In 1836 Karelin was charged with the exploration of the eastern and southern shores and the islands of the Caspian Sea. He corrected the maps of these regions, travelled far inland, explored the steppes of Turkmenia, and made a survey of the old estuary of ancient Oxus or Amu-Darya. This particular map is a very valuable contribution to the science of geography. Finally he visited the shores of Asterabad Bay and laid the groundwork for the establishment of regular trade relations between Russia and Persia.

All these varied activities never prevented Karelin from continuing his scientific researches; he prepared extensive botanical and zoological collections, while his diaries include valuable data on the flora and fauna of the regions visited. His travels had made the name of Karelin widely known and he was elected to membership in many scientific societies. The Russian government recognized his services and rewarded him with a grant of 6,000 roubles and a pension of 900 roubles a year. Emperor Nicholas I invited him for a lunch and gave him a valuable diamond ring as his personal gift.

No wonder that in 1839 the oldest scientific society in Russia, the Société de Naturalistes de Moscou, invited him to take charge of a scientific expedition for the exploration of the Altai, Tarbagatai, and Sayan Mountains, and Dzungaria. Karelin willingly accepted and soon an agreement was reached as to the itinerary of the expedition and its financial support. Karelin was to receive 3,500 roubles a year plus all expenses of the expedition. Besides that, he retained his regular salary from the Finance Department, where he had been employed since 1838. He was to collect botanical, zoological, mineralogical, and geological specimens, ship his collections every two months, and submit a monthly report. The agreement was for a period of two years. It may be noted here that, although the Sayan Mountains were included in the itinerary of the expedition and there are some references in literature concerning Karelin's travels in this region, neither he nor any of the members of his expedition ever visited that region. The researches of Lipsky, Romanovsky, and Lipschitz and the study of Karelin's diaries prove this conclusively.

After careful preparations, which took several months, Karelin started his famous expedition on March 15, 1840, from Orenburg, going eastward through Troitzk, Petropavlovsk, and Omsk to Semipalátinsk. In addition to Kirilov, the party included a Cossack officer, G. A. Maslennikov, a very skillful hunter, and G. D. Karaulov, a zoological collector and preparator.

I make no attempt to give a detailed itinerary of Karelin's travels, but will merely summarize his explorations for each year. Fortunately he wrote many letters, sent his reports regularly to the Society of Naturalists of Moscow, and kept a diary of his travels. These letters and some of his reports are samples of brilliant, colorful scientific language. It is to be regretted that Karelin published so little and that all his manuscripts were destroyed by a fire in 1872.

In 1840 Karelin explored the Tarbagatai and Narym Mountains and the Semipalatinsk region. Kirilov made independent explorations to Lake Nor-Zaissan and to the northern slopes of the Tarbagatai Range. The results of the first year were very good. Fifty-two boxes of collections, including 38,000 botanical specimens representing 1,127 species, were sent to Moscow.

In 1841 the party explored the Alatau Mountains and the Semirechensk region. Besides his regular staff, Karelin had about fifty Cossacks who served as a convoy to the expedition, but he trained some of them as collectors and hunters. Of these men we should mention especially Captain S. M. Abakumov, who became a proficient botanical and ornithological collector. The results of the second year were even better than those of the first, although the expedition was many times attacked by "barantachi" (rebellious Kirghizs). About 55,000 botanical specimens were sent to Moscow. In the fall Kirilov was sent with some collections to Krasnoyarsk, where he worked under direction of Turczaninow on the preparation of the *Enumeratio plantarum*. The correspondence between Karelin and Turczaninow proves that the latter contributed greatly to this work, which is considered one of the best in Russian botanical literature. It lists 1891

species and includes descriptions of eight new genera and 220 new species. Lipsky is of opinion that the influence and constructive criticism of Turczaninow, the best Russian botanist of that time, added very much to the value of this work.

In 1842 Karelin was again in the Alatau Mountains, in eastern Altai, and in Dzungaria (Bayan Aul and Karakalinsk regions). All his diaries of this year are missing; probably they were lost with other papers (letters, reports, surveys) which Kirilov had with him when he died so suddenly at Arzamas, apparently of cholera. This tragedy, which deprived the expedition of a key assistant, was a severe personal blow to Karelin, who loved Kirilov no less than his own children. Sophia G. Karelina says in her recollections that her father was so distressed on receiving the news of Kirilov's death that he became hysterical, tried to drive his head against the wall, and his companions had to keep him under close watch for many days, fearing that he might commit suicide. After this violent period he became apathetic and morose and was not able to work. This depressed condition continued for some months but gradually passed. After the death of Kirilov, the work on the identification and description of the plants, which had been done mostly in the winter months, stopped. The botanical collections of 1842-44 were partly described later by S. S. Shchegleev.* It is a peculiar fact that after the death of Kirilov, Karelin never published a botanical paper in the remaining 30 years of his life (1842-72). This does not of necessity mean that he suddenly lost interest in botany. Although he is usually considered as a zoologist *par excellence*, this is hardly correct. At least he considered himself a botanist in the first place, and his earlier publications, his correspondence with the best Russian botanists of the time, and especially his diaries, where botanical observations always play a dominant role, prove that he was right in that respect. It must be borne in mind that he was manifestly an outdoor type, a man of action, a born traveller and explorer, and not a cabinet worker. He started to write regularly when he was over fifty years old and partially incapacitated as a traveller by a severe attack of rheumatism.

In 1843 Karelin made an expedition through the Kokbetinsk region to Lake Nor-Zaissan, described it, and explored the Upper Irtysh for 400 miles from its source to Ust' Kamenogorsk. There are no data on the number of specimens in the collection; it is known only that it contained 1678 species. Maslennikov made a separate expedition to the sources of the Lepsa River in the Alatau Mountains, where he collected zoological and botanical specimens.

*Shchegleev, S. S. [Stschégléew, S. S.]

1854a. Supplementum ad Floram Altaicam. Dissertatio. i-ii, i-iv, 1-119.

One chapter is in Latin, the rest in Russian; supplement to Karelin & Kirilov 1841 & 1842.

1854b. Nouveau supplément à la flore Altaïque. Bull. Soc. Nat. Moscou **27**(1): 145-211.

A republication of a chapter in Latin in the original work, with a preface in French.

Karelin explored the basin of Buchtarma River in 1844 and travelled in Dzungaria and in the border regions of northeastern China. Maslennikov again visited the Alatau Mountains and collected plants in the valleys of the Lepsa, Djamantash, and Tentek Rivers. There are no data on the size of the botanical collections assembled.

The expeditions having continued for almost five years, Karelin enthusiastically insisted that the work should be prolonged for at least one year more. This suggestion met a very unfavorable reception from all sides. The Society of Naturalists of Moscow helped Karelin in many ways and gave its moral support, but, after spending about 18,000 roubles on the expeditions, it discontinued financial aid in the middle of 1842. The only source of money was Karelin's salary, but even this meager supply became uncertain. The Secretary of Finance, from whose department Karelin was drawing his regular salary of 3,000 roubles, frowned on his scientific activities and advised him many times to return to his regular work in St. Petersburg, but Karelin always refused on some pretext. The long controversy came to a sudden end when the Finance Department asked Prince Gorchakov, Governor of Western Siberia, to induce Karelin to return to St. Petersburg. The Governor, who had a very strong personal dislike of Karelin, was very willing to do this. He provided a police escort and sent him out of Siberia in June, 1845. This was the sad end of the famous expedition. How it could happen that the famous explorer, honored personally by Emperor Nicholas I, was deported in such a humiliating way, by an arrogant provincial official, is very strange. Lipsky, the best biographer of Karelin, hints vaguely that there must have been some less obvious factors. A very careful study of all available documents relating to this deportation does not support this allegation, and we do not feel justified in making further speculations on that subject. As an aftermath of this unhappy affair, Karelin was retired from the Finance Department on November 14, 1845.

There are no complete data on the collections of Karelin and Kirilov, which are considered the richest ever made in that formerly almost unknown region. The dossier of that expedition, which was at one time in the archives of the Society of Naturalists of Moscow, was lost. Fortunately many copies of letters, reports, and some manuscripts, which were in the possession of Karelin's daughters, were saved. In one of his letters to Count Stroganov, Karelin gives the following data on his collections for three years (from May 9, 1840 to March 16, 1843): animals — 240, birds — 1669, insects — 9766, fishes — 8, snakes — 34, lizards — 169, plants — 90,142, seeds — 442, and minerals — 474. It should be noted that the number of plants in this particular list is apparently wrong; it must be larger. The number of botanical specimens for the first two years alone (1840–41) totaled 93,000. These collections are incorporated in the herbaria of Moscow and St. Petersburg Universities, the St. Petersburg Botanical Garden, and the Academy of Sciences. Many thousands of duplicates were distributed to the principal herbaria of Europe, as well as to some in America, thus making Karelin's expedition widely known.

After his forced retirement, Karelin joined his family, which had moved in 1842 from Orenburg to his small estate in Trubitsyno, near Moscow. Here he spent six years in the company of his wife and four daughters, working on his collections. It was apparently a happy period of his life, because the recollections of his daughters give us a picture of him as a very devoted father and husband and a man of gay, pleasant disposition, who loved rural life and its simple pleasures. But still his inborn longing for the study of nature and new places was stronger than his family ties. In 1852 he wrote to Count Perovsky, then the Governor of the Orenburg region: "For six years I have been living in Moscow and its vicinity and I feel now an irresistible desire to travel once more. I want to make a short trip this summer through the Ural steppes to the Caspian Sea. My goal is to explore the Inder Lake and the northern shores of the Caspian Sea . . ." He asked the permission of Perovsky to make this trip, and, permission being granted, Karelin departed on July 20, 1852, telling his daughters: "In six months, children, I shall be back, and now good-bye."

He never came back. He lived for twenty years a virtual hermit in the small town of Guriev, travelled occasionally in the Ural Cossack region, made some ornithological observations, and worked very assiduously on the description of his travels. It is known that he prepared for publication eleven large volumes of manuscripts, but lack of financial support prevented their publication. He suffered very much from severe rheumatism and was bedridden for the last two or three years of his life. His house and all his manuscripts and collections were destroyed by fire in the summer of 1872. This was too much for an old and sick man, for he failed to survive this final blow and soon died, on December 17, 1872.

Some facts regarding Karelin's life are strange and can hardly be explained in a satisfactory way, especially his self-exile to Guriev. The persons closest to him, his daughters, frankly confess that they were at a loss to find any reasons for the sad, solitary end of his life. There is no doubt that Karelin was a very complex human being and not as well balanced and happy as he seemed to be. The only personal comment regarding this last period of his life is the following excerpt from one of his last articles written in Guriev in 1868: "In 1852 I came for a short visit to the estuary of the Ural River, in order to make some observations on the migration, breeding, and moulting of birds. But I found such a wide field for other scientific explorations and such peace and freedom, which I needed for the arranging of the extensive materials collected on my travels, that instead of two years I stayed here more than sixteen years . . ."

This and another sentence in Karelin's letter of June 30, 1841, to Count Stroganov give us some hints for the better understanding of the character of this remarkable man. In that letter Karelin wrote: "My expedition is a great success. I am writing to you from the height of 9,000 feet, in the neighborhood of icebergs and eternal snow, but surrounded by such wonderful and rare flowers that some days I walk hatless in an ecstasy of reverie . . ." It seems to us that nature was the only great and real love of

this enthusiastic scientist. On the altar of this passionate, all consuming love he sacrificed his happiness and his life.

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A biographical sketch in Russian, based partially on a letter of N. S. Turczaninow to Karelin.

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- 1905a. A conclusion to the letter of Prince P. D. Gorchakov to Karelin. In V. Lipsky, *Flora Asiae Mediae* pt. 3, pp. 726-742.

A study in Russian of the letters and documents pertaining to the deportation of Karelin from Semipalatinsk in 1845.

- 1905b. "Kareliniana" 1829-1905. In V. Lipsky, *Flora Asiae Mediae* pt. 3, pp. 743-787.

A very complete bibliography containing (1) works by Karelin, and (2) papers describing the life of Karelin or based on his works and collections.

LIST OF PLANTS NAMED IN HONOR OF G. S. KARELIN

Genus: *Karelinia* Less. (= *Pluchea* Cass.) in Compositae.

Species: *Acantholimon Karelini* Bunge, *Alfredia Karelini* Led., *Ammodendron Karelini* Fisch. et Mey., *Anabasis Kareliniana* Led., *Aquilegia Kareliniana* C. A. Mey., *Arctium Karelini* Kuntze, *Astragalus Karelini* Fisch., *Atraphaxis Karelini* Jaub. et Spach, *Carex Karelini* Meinsh., *Chara Karelini* Less., *Cousinia Karelini* Less., *Corydalis Kareliniana* Turcz., *Echinosperrum Karelini* Fisch. et Mey., *Ferula Karelini* Bunge, *Fritillaria Karelini* Bak. (*F. gibbosa*), *Halimocnemis Karelini* Moq. Tand., *Karelinia caspica* Less., *Ligularia Kareliniana* Stsch., *Lomatopodium Karelinianum* Turcz., *Lonicera Karelini* Bunge (*Xylosteum Karelini* Rupr.), *Malcomia Karelini* Lipsky, *Rhinopetalum Karelini* Fisch., *Salix Karelini* Turcz., *Saussurea Karelinii* Stsch., *Suaeda Kareliniana* Fzl., *Statice Karelini* Stsch., *Tamarix Karelini* Bunge, *Zygophyllum Karelini* Fisch.

LIST OF PLANTS NAMED IN HONOR OF I. P. KIRILOV*

Genus: *Kirilowia* Bunge (= *Kirilovia* Lindl.) in Chenopodiaceae.

Species: *Carex Kirilowii* Turcz., *Halimocnemis Kirilowii* Fenzl, *Kirilowia eriantha* Bunge, *K. pilosa* Bunge (*Pandera pilosa*), *K. villosa* Benth. & Hook., *Lepidium Kirilowii* Trautv., *Pyrethrum Kirilowii* Turcz. (*Tridactylina Kirilowii* C. H. Schultz), *Salix Kirilowiana* Stsch.

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*Borodin made a mistake in listing in his *Collectors and collections of the Siberian flora* (p. 47) *Sedum Kirilowii* Regel and *Senecio Kirilowii* Turcz. as plants named in honor of I. P. Kirilov. Lindemann (Dritter Bericht . . . no. 383) was also wrong in including in a similar list *Eupatorium Kirilowii* Turcz. and *Sorbaria Kirilowii* Maxim. These four species, according to Bretschneider (*History of European botanical discoveries in China*, pp. 346-352), were named in honor of Porfirij Evdokimovich Kirilov (1801-1864), a physician of the 11th Russian Ecclesiastic Mission to China, who travelled with Bunge in 1830 through Mongolia to Peking and who collected in China from 1830 to 1841.

Herder, in his *Biographische Notizen* (in *Bot. Jahrb.* 9: 438. 1888), cites "Kiriloff, Joh. Porph." This mysterious collector is really a mixture of the two above-named Kirilovs. Biographical data and even first and middle names are evenly mixed up.